

### **ABSTRACT**

An apparatus and related method for measuring the presence or degree of stratified flow in a two-phase flow is disclosed. A first speed of sound for the fluid flowing through the pipeline is measured for an ultrasonic signal that would reflect from stratified flow, if present. A second speed of sound is measured at a location that would not reflect off the stratified flow. A difference in these two measurements indicates the presence of stratified flow. The level of stratified flow can be determined based on the magnitude of the difference.